

Test Next Class

History, Nuke, Quantum, Particle

Recap Particle:

p1145

Q1

a) $\eta \rightarrow \gamma + \gamma$
electromagnetic

b) $\Delta^* \rightarrow p + \pi$
strong force
no strangeness

c) $\Lambda^0 \rightarrow \pi^- + p$
weak force
strangeness

d) $\eta' \rightarrow \eta + \pi + \pi$
strong force
no strangeness

Q13

$\pi^+ \rightarrow \mu^+ + \nu_\mu$ Final KE
 $m = 139.57 \frac{\text{MeV}}{c^2}$ $m = 105.658 \frac{\text{MeV}}{c^2}$

$$139.570 - 105.658 - c = 33.912 \frac{\text{MeV}}{c^2} = m$$

$$E = mc^2 = 33.912 \frac{\text{MeV}}{c^2} \cdot c^2 = \boxed{33.912 \text{ MeV}}$$

Q28

$$E = mc^2 + EK$$

$$E = 0.511 \text{ MeV} + 1.0 \text{ MeV} + 0.511 \text{ MeV}$$

$$+ 20 = 31 \text{ MeV}$$

~~Ud's~~ $B = \frac{1}{3}(3) = 1$

$$Ud's \quad S = -(1-0) = -1$$

$$\text{Charge} = \frac{1}{3}(2) - \frac{2}{3} = 0$$

$$\frac{3}{2} k_B T$$